

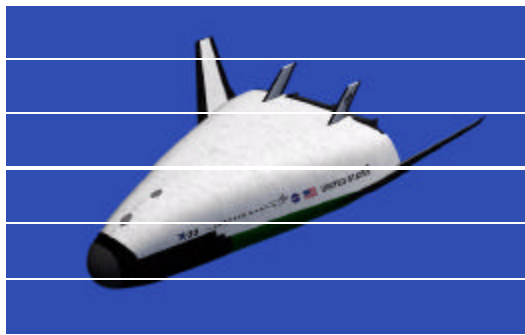
- Excerpt of Full Report -

This document contains excerpts from the X-33 Independent Assessment Report (title page shown below). Only those sections which relate to the PBMA element **Manufacturing** are displayed.

The complete report is available through the PBMA web site, Program Profile tab.

**X<sup>33</sup>**

**Safety & Mission Assurance Review**

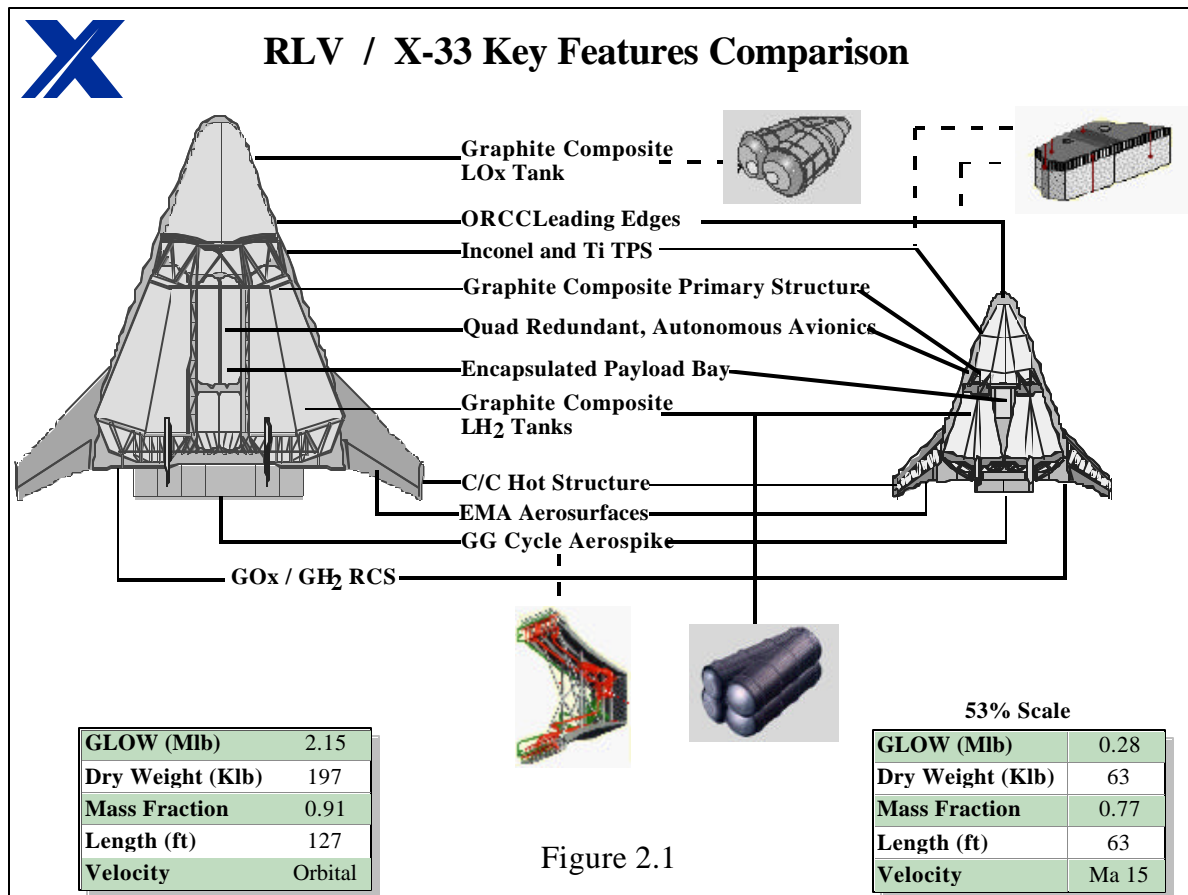


NASA Office of Safety & Mission Assurance

March 5, 1998

## 2.5 Vehicle Manufacturing

Construction has begun on the X-33 and major components are already taking shape. The large aluminum tank that will contain the liquid oxygen has been completed and was recently delivered to the LMSW. The final assembly jigs are already in place at the LMSW facility at Palmdale. Figure 2.1 presents a comparison between key structural and propulsion elements of the X-33 and RLV.



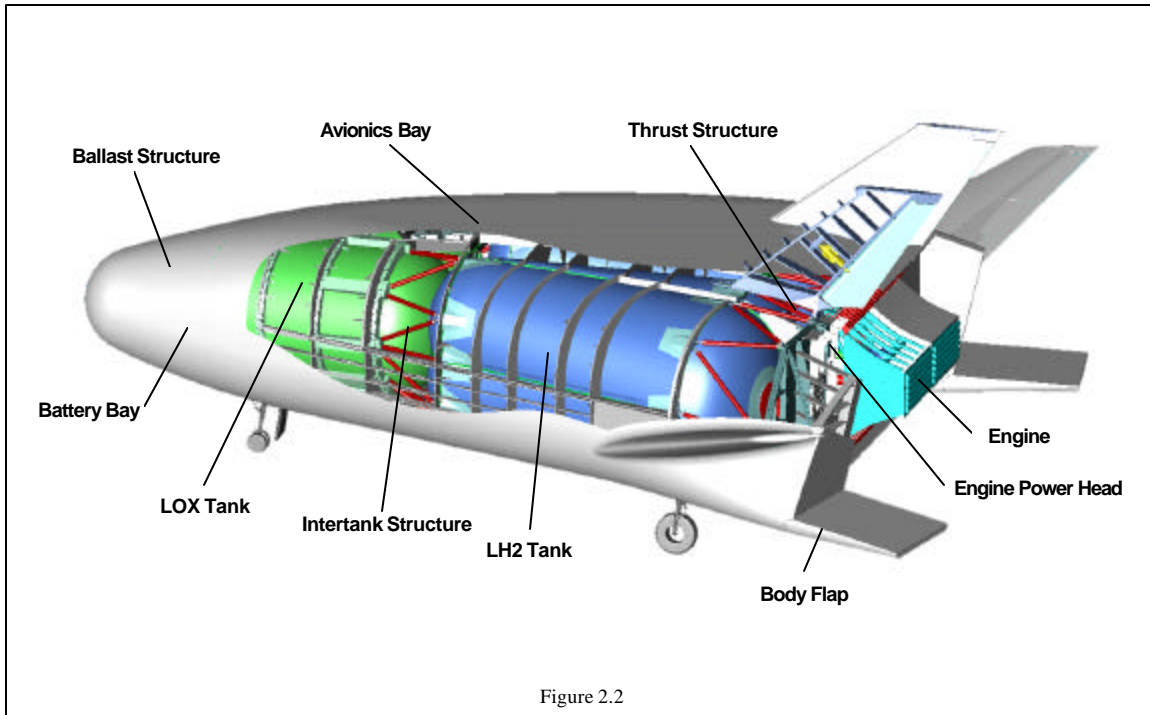


Figure 2.2, provides a cutaway view of the X-33, showing the location of LOX and LH2 tanks and indicating thrust load paths through the tanks and intertank structures.